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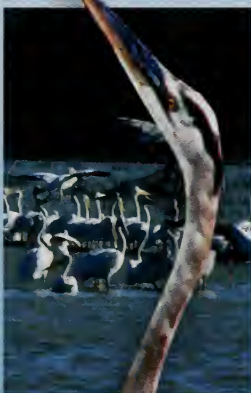


United States  
Department  
of Agriculture

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Plant Health  
Inspection  
Service

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# Wildlife Services: Managing Bird Damage to America's Resources



**Photo credits:**

*Cover photos*—Many bird species can cause damage to America's agricultural and natural resources. (The image of a cow and her calf surrounded by vultures was taken by APHIS photographer John Humphrey. The image of a flock of vultures perching on a tree was taken by APHIS photographer Eric Tillman. The remaining cover photos are from the agency's image archive.)

*Images inside the brochure*—All interior photographs except the cormorant picture come from the APHIS image archive. Individual photographers have been credited where possible.

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**M**ore than 700 bird species make their home in the United States. The diversity and range of these species help to shape our Nation's landscape, but these same birds can also cause damage, destroying agricultural and natural resources and sometimes even threatening public health and safety.

Wildlife Services (WS), a program within the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, provides Federal leadership and expertise to resolve problems and damage caused by birds. Whether the damage is occurring in agricultural or urban areas, WS responds in a way that balances the needs of both people and wildlife.

Using an integrated approach that combines a variety of science-based methods, WS assists dairy, livestock, crop, and aquaculture producers in resolving bird predation and contamination problems from droppings. In urban areas, WS works to prevent bird strikes at airports and protect public health and safety at parks and other open areas frequented by ducks and Canada geese. The program also works to resolve property damage caused by certain bird species that are thriving in urban and suburban environments across the country.



Overabundant populations of Canada geese and ducks can lead to public health and safety problems at parks and recreational areas.

## Crop Damage

Blackbirds, gulls, Canada geese, crows, and other birds can cause severe damage to a whole host of agricultural crops, including sunflowers, rice, corn, winter wheat, fruits, and nuts. Crops are especially vulnerable to bird damage because they are exposed throughout the entire growing season without any covering or protection. In many cases, such crops are the best food source available for miles and serve as a buffet for migrating or roosting birds.

The extent of damage, however, can vary dramatically from one location to the next. In any given year, one producer may experience devastating losses while another nearby producer harvests a record crop. WS' goal is to help producers experiencing damage while ensuring that the problem isn't inadvertently moved elsewhere when the birds are dispersed.

The type of damage experienced by producers depends on where they farm in the United States.

Blackbirds, however, are notorious for causing damage to a variety of crops across the country. In the upper Great Plains alone, blackbirds are responsible for more than \$5 million in losses annually to sunflower and grain crops. Researchers at WS' National Wildlife Research Center (NWRC) have determined that blackbirds roost in cattail stands adjacent to sunflower fields, feeding by day and returning to the safety of the cattails at night. By reducing the number of cattails surrounding sunflower fields, WS has helped to reduce the damage being experienced by some producers.

Waterfowl like the Canada goose can also cause significant damage. These large birds, which are considered to be overabundant in many parts of the United States, graze and trample crops, such as soybeans and cereal grains.

In addition, their finger-size droppings can contaminate fields and crops.

As populations of these species continue to increase, so will the need to manage the damage that they cause.



Flocks of redwinged blackbirds, sometimes numbering in the tens of thousands, can destroy a grain field in a few days.  
(APHIS photo by David Bergman.)

## Fish-Eating Birds

Birds can cause problems in the water as well as on land. Aquaculture is a rapidly growing industry in the United States, but wildlife depredation, especially by fish-eating birds, is having a significant impact on production. Double-crested cormorants and American white pelicans have a voracious appetite for farm-raised fish. In the Northeastern United States, the great blue heron is of major concern to aquaculturists.

Aquaculture industry costs associated with bird damage and damage prevention exceed \$17 million each year. In controlled studies aimed at assessing the impact of cormorants on catfish production, NWRC researchers found that the birds consume seven to nine catfish a day. It is estimated that cormorants alone consume 18 million to 20 million catfish fingerlings annually.

WS assists the aquaculture industry in meeting the challenge of managing the damage caused by fish-eating birds. The program's



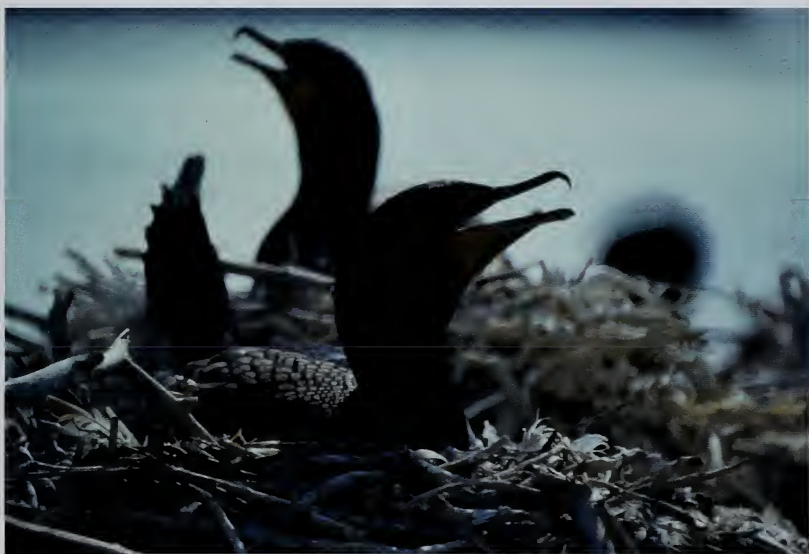
Farm-raised fish are an easy meal for double-crested cormorants and American white pelicans. (APHIS photograph by Laurie Smith.)

research center is currently conducting research to develop nonlethal methodology, such as fish-culturing practices and bird-scaring devices, to reduce depredation at aquaculture facilities.

NWRC researchers are also studying the link between fish-eating birds and disease transmission at aquaculture ponds. Studies have shown that American white pelicans have the potential to transmit a parasite that is currently infesting commercially grown catfish in the mid-South.

In addition to aquaculturists, some anglers also are worried about the impacts of these birds. In the Great Lakes region, cormorant populations are increasing dramatically and concern exists that the birds are damaging recreational fishing as well as habitat and

tourism. A number of uninhabited islands on Lakes Erie, Ontario, and Superior have been devastated by the acidic droppings of cormorants that nest and roost on the islands and feed on fish in the surrounding waters.



Overabundant cormorant populations are having a negative impact on a number of aquaculture facilities in the Southern United States.

(Photo courtesy Sumner W. Matteson, Wisconsin Department of Natural Resources' Bureau of Endangered Resources; reproduced by permission.)

## Livestock Depredation

Reports of black vultures and ravens attacking livestock are steadily increasing. While newborn calves, lambs, and pigs are especially vulnerable, cattle, sheep, and hogs giving birth are at risk as well. The birds attack in groups, making it difficult for mothers to protect their young. Residents and livestock producers in at least 15 States have reported vulture conflicts to WS personnel. WS assists producers in obtaining permits to remove problem vultures, but the program also recommends a number of nonlethal tools to manage the damage.

NWRC researchers have already developed a number of management tools, with one of the most promising being vulture effigies. Hanging a vulture carcass, taxidermic effigy, or even an artificial decoy from a nearby tree creates an unfavorable roosting environment for vultures and keeps them from returning to the area. While the effect is not permanent, it can be especially beneficial when livestock are birthing their young in the spring.



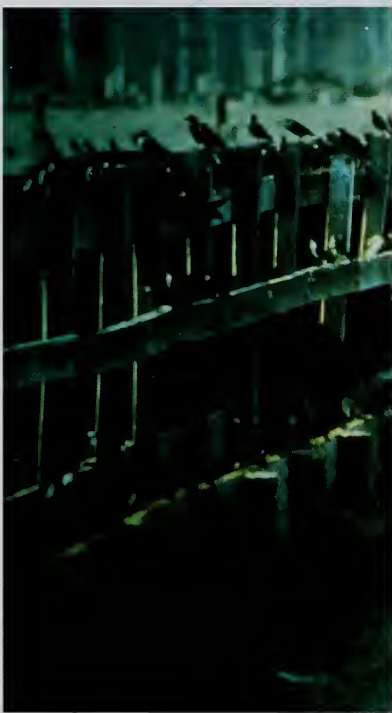
Newborn calves, lambs, and pigs are especially vulnerable to vulture attacks.  
(APHIS photo by John Humphrey.)

## Damage at Dairies and Feedlots

In the winter, starlings congregate at dairies and feedlots for food and shelter. During cold conditions, producers have seen as many as 10,000 starlings overwhelm their operations. Damage occurs as the birds consume and contaminate feed with their droppings. Contamination of feed and lowered rates of consumption reduce the milk production of dairy cows because they receive fewer calories and nutrients. Producers have documented significant increases in milk production following starling removal by WS.

Trained WS specialists assist producers with resolving starling damage through the use of an environmentally sound avian toxicant that reduces starling numbers, without posing a threat to other, nontarget species or livestock. Trapping is also an effective way to catch starlings and reduce populations in targeted areas. Unlike other birds that can be dispersed through harassment, starlings, an invasive species, are resistant to any type of dispersal. In addition,

sound cannons and other pyrotechnics traditionally used to move birds are upsetting to dairy cows and could result in further negative impacts on their milk production.



Starlings consume and contaminate cattle feed with their droppings.

## Airport Hazards

Airports often are surrounded by landfills, wetlands, and other habitats that attract a variety of bird species. Many of these birds end up feeding, resting, or roosting near airport runways, posing a potential threat to air travelers, pilots, and their crews. Wildlife collisions with aircraft cost U.S. civil aviation more than \$470 million annually and pose a serious safety hazard as well. From 1990 to 2002, 46,000 bird strikes were reported at U.S. airports, but experts estimate that only about 20 percent of all strikes are reported. With increased air travel and rising bird populations, this threat is only becoming more serious.

The bigger the bird, the bigger the threat to air safety. A flock of smaller birds ingested into an engine can be dangerous as well. Since WS began collecting data on

bird strikes in 1990, more than 250 different species have been identified following collisions with aircraft. That's more than one-third of all bird species identified in the United States. Gulls, raptors, and waterfowl are most commonly involved in bird strikes. While gulls are implicated in 25 percent of all strikes, waterfowl, such as geese and ducks, cause the most damage.

WS is recognized internationally for its scientific expertise in reducing wildlife hazards at airports and military bases. Trained WS specialists provided assistance at more than 500 airports in 2002. Before any work is done, however, WS assesses what species are posing the biggest threat and what environmental factors are drawing them to the airport. Changing airport



Birds pose the biggest threat to airplanes during takeoff and landing.

habitat by removing certain landscaping, such as ponds and tall grass, is one effective way to reduce the presence of birds around runways. WS also helps to trap and relocate or remove species that can't be dispersed by

traditional means. As part of this effort, NWRC continues to conduct research to better manage damage at airports and prevent birds and other hazardous wildlife from arriving in the first place.

## Urban Damage

Each year, birds cost property owners millions of dollars in damage. Everything from homes, lawns, landscaping, golf courses, parks, equipment, machinery, industrial facilities, and other property are vulnerable to bird damage. Aggressive birds and excessive droppings can also pose public health and safety concerns. As increased urbanization leads to a reduction in wildlife habitat and as wildlife populations continue to expand, these problems are on the increase.

In the last decade, WS' mission has expanded beyond agricultural damage management, to include urban and suburban wildlife damage management. This damage takes a variety of forms. For example, in an attempt to gain entry into homes and businesses, birds can cause serious structural damage that can lead to costly repairs. Excrement from roosting birds can corrode machinery and car paint and create a slipping hazard on sidewalks. The

noise and excrement from a roost of vultures or crows can be so severe that backyard swing sets, grills, and lawn furniture become useless. Many cities and towns also complain of pigeon droppings and damage to historic landmarks, such as monuments and courthouses. Over time, a buildup of this excrement can lead to outbreaks of histoplasmosis, a respiratory ailment caused by a fungus in bird droppings.

With their voracious appetites, Canada geese can destroy golf course greens, backyard gardens, and other landscapes. These geese have adapted so well to urban environments that in the springtime, their nests can be found throughout these areas. In an attempt to guard these nests from passersby, Canada geese can become aggressive, attacking anyone who poses a threat. WS has responded to multiple reports of small children and senior citizens being injured by aggressive geese that can weigh as much as 12 pounds. Excessive droppings from

overabundant Canada goose populations have also forced the closure of public parks and swimming holes.

Responding to these urban complaints can be a challenge for WS. Many dispersal techniques that work well in rural areas only move bird populations from one neighborhood to another in urban areas. WS recommends a number of methods to protect property and keep urban bird populations from growing. Thin wire grids over ponds can keep birds from roosting on these sites. To protect property, WS recommends a number of exclusion devices that keep birds from gaining access to homes and

buildings. At parks and other locations with overabundant populations of Canada geese, WS has been successful in keeping the number of birds in check by oiling eggs each spring. This process stops development of the eggs and keeps them from hatching. In certain situations, WS also relocates or removes bird populations when an immediate public health or safety concern exists.



Bird damage to homes, buildings, and historic monuments can be costly to repair and renovate.

## **Creating a Balance**

As bird populations continue to increase, WS' assistance is in constant demand. NWRC continues to conduct studies to develop more effective methods, tools, and repellants that will help WS and property owners to manage ever-increasing bird populations. The skill and knowledge of WS' trained specialists provide damage-management solutions for a number of bird problems that are beyond the scope of producers, homeowners, businesses, and local communities to resolve. Through this research and conflict management, WS works to create a balance that allows people in both rural and urban areas to coexist with a variety of bird species.

## **Additional Information**

For more information about WS programs and wildlife damage management, contact WS at 1-866-4USDAWS (1-866-487-3297). You can also visit the program's Web site at <http://www.aphis.usda.gov/ws>.

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